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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,773	03/31/2004	Joseph Deuringer	P04,0119	5205

7590 03/22/2006  
SCHIFF HARDIN LLP  
Patent Department  
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EXAMINER

YUN, JURIE

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/813,773	DEURINGER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/6/06</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The response under 37 C.F.R. 1.116 filed 3/6/06 has been entered.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lounsberry et al. (USPN 6,412,980 B1).
5. With respect to claim 1, Lounsberry et al. disclose an apparatus for generating x-rays for use with a peripheral device containing a process computer, said apparatus comprising: a structural unit (Fig. 1, 110 & 120) containing all of a plurality of components operable in combination for generating x-rays, including an x-ray tube (110) and a digital control, regulation and storage unit (electronic device-120, made up of storage medium-123 & microcontroller-125), said digital control, regulation and storage unit being connected to all of said components, including being connected to said x-ray tube for controlling operation of said x-ray tube; and said digital control, regulation and storage unit having an interface (data communication link-130), accessible at said structural unit, adapted for connection to said process computer

(140), said interface forming a single interface to said process computer for all of the components in said structural unit (column 3, line 43 – column 4, line 53).

Lounsberry et al. disclose all of the elements except for the structural unit (110 & 120) being a single structural unit having a housing. However, Lounsberry et al. disclose (column 4, lines 45-49) that the electronic device 120 is preferably physically coupled to the x-ray tube unit 110, and that this would provide for system information residing with the x-ray tube unit 110 as it is returned to the factory or tube loading facility for autopsy and disposal. Given this, it would have been obvious to one of ordinary skill in the art at the time the invention was made to house these in one single housing, for ease of installation and removal, which would also save time.

6. With respect to claim 6, Lounsberry et al. disclose the digital control, regulation and storage unit contains a program, and operates according to said program to store accumulated operating data associated with operation of said x-ray tube (column 4, lines 45-53).

7. With respect to claim 9, Lounsberry et al. disclose a high voltage generator connected to the x-ray tube for supplying high voltage to the x-ray tube for operating the x-ray tube (column 1, line 23).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lounsberry et al. (USPN 6,412,980 B1) as applied to claim 1 above, and further in view of Hess et al. (US 2002/0009179 A1).

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9. With respect to claim 2, Lounsberry et al. disclose the x-ray tube has a cathode assembly (claim 21), but are silent as to a heater current source connected to the cathode for heating the cathode. Hess et al. disclose a heater current source (page 2, paragraph 0024). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the x-ray tube includes a heater current source connected to the cathode for heating the cathode, as taught by Hess et al., to produce x-rays.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lounsberry et al. (USPN 6,412,980 B1) as applied to claim 1 above, and further in view of Richardson et al. (USPN 6,519,317 B2).

11. With respect to claim 3, Lounsberry et al. do not disclose a cooling unit associated with said x-ray tube for circulating a coolant for cooling the x-ray tube, and a sensor for sensing at least one of a pressure and a temperature of said coolant. Richardson et al. disclose a sensor for sensing pressure of the x-ray tube coolant (column 8, lines 20-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a cooling unit and a pressure and/or temperature sensing means in Lounsberry et al., as taught by Richardson et al., to ensure sufficient cooling/pressure of the x-ray tube, which would result in longer life of the x-ray tube.

12. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lounsberry et al. (USPN 6,412,980 B1) as applied to claim 1 above, and further in view of Daniels et al. (USPN 4,160,906).

13. With respect to claim 4, Lounsberry et al. do not disclose the digital control, regulation and storage unit contains a program, and operates according to said program, for determining acceptability of a load on said x-ray tube requested by a user. Daniels et al. disclose a program for determining acceptability of a load on an x-ray tube requested by a user (column 4, lines 17+ & column 9, line 50 – column 10, line 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program for determining acceptability of a load on said x-ray tube requested by a user in the Lounsberry et al. device, as taught by Daniels et al., to prevent x-ray tube failure and to promote longer x-ray tube life.

14. With respect to claim 8, Lounsberry et al. do not specifically disclose the digital control, regulation and storage unit contains a program for monitoring operation of the plurality of components, including monitoring operation of the x-ray tube. Daniels et al. disclose a program for monitoring operation of the plurality of components, including monitoring operation of the x-ray tube (column 10, lines 28+). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program in Lounsberry et al., for monitoring operation of the plurality of components, including monitoring operation of the x-ray tube, to promote longer x-ray tube life.

15. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lounsberry et al. (USPN 6,412,980 B1) as applied to claim 1 above, and further in view of Laurent et al. (USPN 4,964,147).

16. With respect to claim 5, Lounsberry et al. do not disclose the x-ray tube has a rotating anode, and wherein said plurality of components include an electrical actuator for said rotating anode. Laurent et al. disclose a rotating anode including an electrical actuator for rotating the anode (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a rotating anode and an electrical actuator for rotating the anode in the Lounsberry et al. x-ray tube, to prolong x-ray tube life, as taught by Laurent et al.

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lounsberry et al. (USPN 6,412,980 B1) as applied to claim 1 above, and further in view of Abdel-Malek (USPN 5,668,850).

18. With respect to claim 7, Lounsberry et al. do not disclose the digital control, regulation and storage unit contains a program, and operates according to said program, to determine at least one of wear of said x-ray tube and an expected remaining life of said x-ray tube. Abdel-Malek discloses a program to determine expected remaining life of an x-ray tube (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a program in Lounsberry et al. to determine expected remaining life of the x-ray tube, as taught by Abdel-Malek, to save time.

***Conclusion***

19. Applicant's amendment of 10/6/05 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jurie Yun whose telephone number is 571 272-2497. The examiner can normally be reached on Monday-Friday 8:30-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jurie Yun  
March 10, 2006



**EDWARD J. GLICK**  
SUPERVISORY PATENT EXAMINER